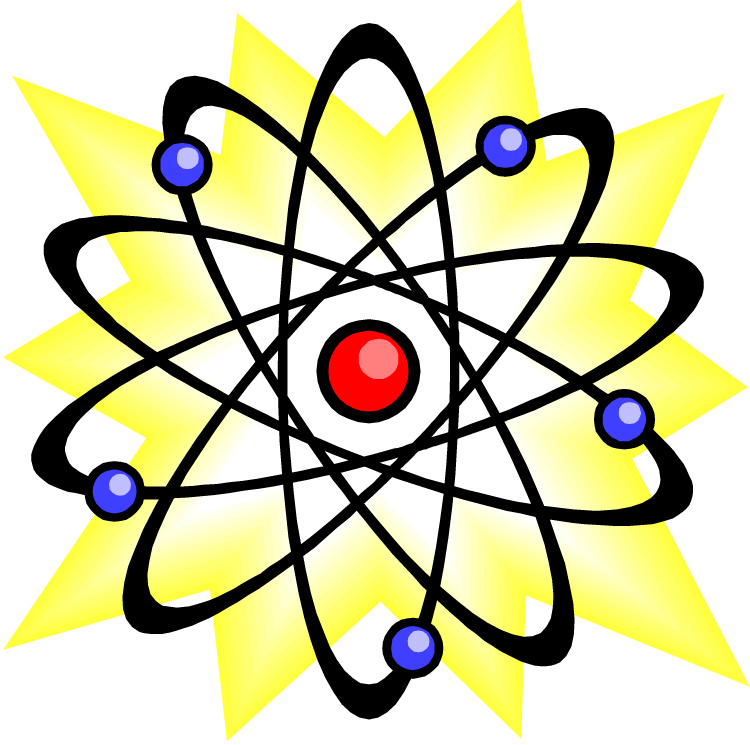
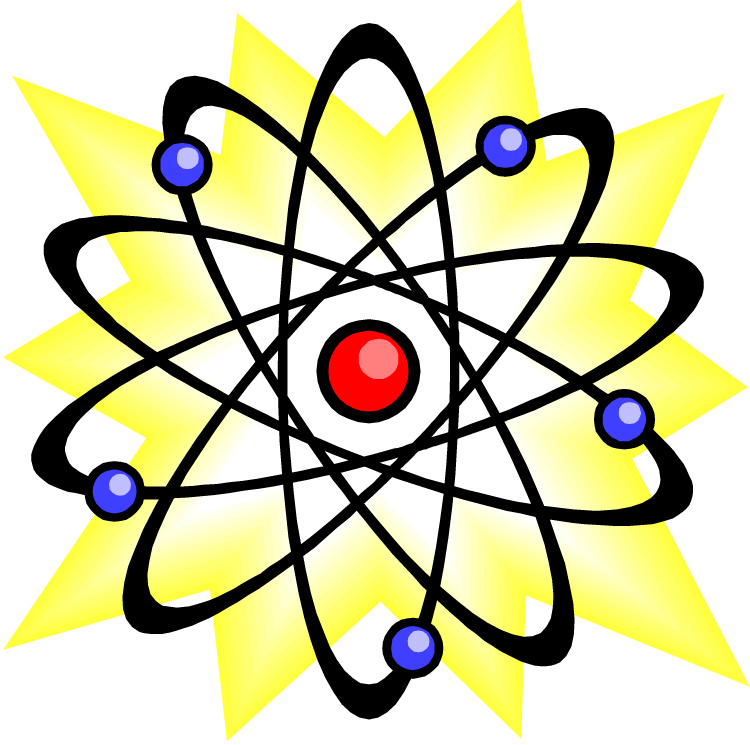
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **H**  **2.20** |  | | | | | | | | | | | | | | | | **He** |
| **Li**  **0.96** | **Be**  **1.50** |  | | | | | | | | | | **B**  **2.02** | **C**  **2.56** | **N**  **2.81** | **O**  **3.37** | **F**  **4.00** | **Ne** |
| **Na**  **0.96** | **Mg**  **1.29** | **Al**  **1.63** | **Si**  **1.94** | **P**  **2.04** | **S**  **2.46** | **Cl**  **3.00** | **Ar** |
| **K**  **0.84** | **Ca**  **1.02** | **Sc**  **1.28** | **Ti**  **1.44** | **V**  **1.54** | **Cr**  **1.61** | **Mn**  **1.57** | **Fe**  **1.74** | **Co**  **1.79** | **Ni**  **1.83** | **Cu**  **1.67** | **Zn**  **1.60** | **Ga**  **1.86** | **Ge**  **1.93** | **As**  **2.12** | **Se**  **2.45** | **Br**  **2.82** | **Kr** |
| **Rb**  **0.85** | **Sr**  **0.97** | **Y**  **1.16** | **Zr**  **1.27** | **Nb**  **1.23** | **Mo**  **1.73** | **Tc**  **1.36** | **Ru**  **1.42** | **Rh**  **1.87** | **Pd**  **1.78** | **Ag**  **1.57** | **Cd**  **1.52** | **In**  **1.69** | **Sn**  **1.84** | **Sb**  **1.83** | **Te**  **2.03** | **I**  **2.48** | **Xe** |
| **Cs**  **0.82** | **Ba**  **0.93** | **\*Lu**  **1.20** | **Hf**  **1.23** | **Ta**  **1.33** | **W**  **1.88** | **Re**  **1.46** | **Os**  **1.52** | **Ir**  **1.88** | **Pt**  **1.86** | **Au**  **1.98** | **Hg**  **1.72** | **Tl**  **1.74** | **Pb**  **1.87** | **Bi**  **1.76** | **Po**  **1.76** | **At**  **1.96** | **Rn** |
| **Fr**  **0.86** | **Ra**  **0.97** |  | | | | | | | | | | | | | | | |
|  | **\*La**  **1.09** | **Ce**  **1.09** | **Pr**  **1.10** | **Nd**  **1.10** | **Pm**  **1.07** | **Sm**  **1.12** | **Eu**  **1.01** | **Gd**  **1.15** | **Tb**  **1.10** | **Dy**  **1.16** | **Ho**  **1.16** | **Er**  **1.17** | **Tm**  **1.18** | **Yb**  **1.06** |
| **\*\*Ac**  **1.00** | **Th**  **1.3** | **Pa**  **1.5** | **U**  **1.4** | **Np**  **1.4** | **Pu**  **1.3** | **Am**  **1.3** | **Cm**  **1.3** | **Bk**  **1.3** | **Cf**  **1.3** | **Es**  **1.3** | **Fm**  **1.3** | **Md**  **1.2** | **No**  **1.3** |

**Electronegativities**

**of the Elements**

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**Electronegativity**

Electronegativity is a measure of an atom’s ability to attract shared electrons to itself in a covalent bond. Please keep in mind that the electronegativity value is the ***relative*** tendency of an atom to attract shared electrons. The numbers seen on this table are relative to one another and cannot be determined exactly. This is the table that I use in my chemistry classes, but a different table will likely show different values.

The trend seen on the periodic table for electronegativity is that the electronegativity tends to increase as you move to the right and up on the periodic table. Of course, the opposite is true as well. Electronegativity decreases as you move to the left and down the periodic table.

These values are useful in determining if a bond is to be classified as nonpolar covalent, polar covalent or ionic. When determining the polarity of a bond, I use the following scale because this is the scale used in my current chemistry book. It is very common for this scale to be different depending on the author/publisher.

🡨------------------ .3 ---------------------- 1.7 ----------------🡪

nonpolar polar ionic

covalent covalent

**To determine the type of bond:**

1. Look up the electronegativity of the two elements involved in the bond.

2. Take the absolute difference between the two elements.

3. Compare the difference in electronegativity to the scale above.

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